

FOREST STEWARDSHIP COUNCIL U.S.



DESIGNING AND BUILDING WITH FSC

TWENTY-FIVE DOLLARS

FOREST STEWARDSHIP COUNCIL U.S.

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DESIGNING AND BUILDING WITH FSC

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DESIGNING AND BUILDING WITH FSC

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FSC Green Building Resources

WELCOME TO DESIGNING AND BUILDING WITH FSC!

This training guide will provide you with all the tools required to design and build projects that incorporate FSC certified wood. From the inspirational introduction, to the real life Case Studies, to the Resources section, everything has been laid out to assist you at every stage of your project. If you need to inspire a client about the broad reaching benefits of using FSC certified wood products, please show them the [INTRODUCTION](#) and the well-respected professionals who have endorsed it. To learn more about forest certification and why FSC is the leader, consult the [FOREST CERTIFICATION AND FSC](#) section. Browse the [SPECIFYING, BUILDING AND ACCOUNTING FSC USE](#) for guidance on appropriate steps, in various project design and construction phases, to ensure that FSC certified products make it to your project site. The [CASE STUDIES](#) section demonstrates successful use of FSC certified wood products in three LEED building projects. Each project is a different building type, with a variety of owners, in three locations across the United States. Lastly, [FSC GREEN BUILDING RESOURCES](#) will continue the education about competing forest certification systems, where to find FSC certified products, and newsletters to keep you in touch with this transforming marketplace.

INTRODUCTION

Dear Design & Construction Professionals,

You are part of a growing green building movement that signals a shift in how we consume and manage nature's resources. Architects, builders, designers and homeowners are increasingly considering how their consumer choices affect our natural surroundings.

Forest Stewardship Council (FSC) certification for wood products represents a real approach to assuring customers that the products they choose come from forests that were managed in a sustainable and responsible manner. When using FSC certified wood products you participate in the transformation of two industries. The design and construction and the forest products industries are together using FSC certified wood as a tool to fulfill the shared objectives of a greener built and natural environment.

If you wish to change the world and support forest management that is environmentally sound, socially respectful, and economically viable, then you can select FSC certified wood products for your new building or existing building renovation.

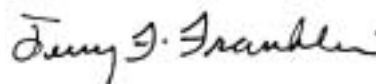
DESIGNING AND BUILDING WITH FSC connects the FSC certified forest products industry to the design and building industry, for the mutually recognized goal of improving forest management through responsible purchasing. It is a tool to assist you in understanding the issues surrounding forestry today, and how as part of the green building community you can use your purchases to drive positive change in our forests.

Thanks for your commitment to helping our growing society maintain the health and vitality of forests.



William McDonough

Founding Principal, William McDonough & Partners



Jerry F. Franklin

University of Washington College of Forest Resources

WILLIAM MCDONOUGH is the founding principal of William McDonough + Partners, Architecture and Community Design, an internationally recognized design firm practicing ecologically, socially, and economically intelligent architecture and planning in the U.S. and abroad. Mr. McDonough's leadership in sustainable development is recognized widely, both in the U.S. and internationally, and he has written and lectured extensively on his design philosophy and practice. Time magazine recognized him in 1999 as a 'Hero for the Planet,' and, in 1996, was the first and only individual to receive the Presidential Award for Sustainable Development, the nation's highest environmental honor.

JERRY FRANKLIN received his bachelor's and master's degrees in forest management from Oregon State University and a Ph.D. in Botany from Washington State University (1966). He has been a researcher for the Forest Service and at academic institutions, including Oregon State University and, since 1986, the University of Washington, and has authored over 300 scientific articles and books. He is active in a wide range of environmental issues including serving on the Board of Trustees, National Institute for Global Environmental Change and on national boards of The Nature Conservancy and The Wilderness Society. Dr. Franklin has been recognized for his contributions to science and conservation by a wide diversity of organizations including: US Department of Agriculture, Society of American Foresters, The Wilderness Society, American Forests, Society for Conservation Biology, the George Wright Society, and Simon Fraser University, who awarded him an honorary degree.

Introduction to forest certification

Forest certification has been actively growing around the world for the last decade. This effort was originally started to show communities in developing countries that there was a concern amongst industrialized countries for how well forests were being protected and managed. As opposed to all out boycotts, which often results in devaluing forest land, forest certification requires that landowners and manufacturers voluntarily invite third-party auditors to certify that their practices meet internationally recognized standards for responsible forest management.



Since the early 1990's, forest certification systems have grown both in the number of participants and acres. Currently, there are more than 90 certification systems worldwide administered by government agencies, non-governmental organizations (NGOs), trade associations, and other entities. Each of these certification systems was created to demonstrate that a given forestry operation is meeting a particular set of standards. However, not all of these certification systems were created equal and not all of them require a transparent, multi-stakeholder process. In a world that is increasingly asking for more accountability, and witnessing environmental degradation at the hands of natural resource-based industries, a transparent multi-stakeholder certification process can provide assurances for protection.

What is FSC?

The Forest Stewardship Council (FSC) is an independent, nonprofit organization that promotes the responsible management of the world's working forests through the development of standards, a certification system, and trademark recognition. A critical component of this system is the recognition of FSC's role as a facilitator of a collaborative process that brings extremely diverse members together to form the FSC standard of forest management. The other key is the recognition that this process is dynamic, in that the FSC's Principles and Criteria that define "good forestry" are subject to continual evaluation and improvement. Part of FSC's uniqueness has resulted from this collaborative process, allowing the organization to interweave the best ideas of its diverse membership into solutions.



In 1994, FSC's members approved an international set of Principles and Criteria. The Principles and Criteria are the threshold of what constitutes

responsible forestry worldwide under the FSC system. Based on these, specific regional standards have been developed in several countries, that are applied above and beyond the original Principles and Criteria to manage for specific, local forest compositions. The regional standards were developed through a unique consensus process that allows for, and actively seeks, participation and input from all interested parties. Since its inception in 1994, FSC's third-party accredited certifiers have certified over 4,000 companies in more than 60 countries to sell FSC certified products, and nearly 125 million acres of forestland in 62 countries—an area larger than Spain—has been certified.

FSC'S PRINCIPLES OF FOREST MANAGEMENT

1. Compliance with laws
2. Tenure use rights and responsibilities
3. Indigenous peoples' rights
4. Community relations and workers' rights
5. Benefits from the forest
6. Environmental impact
7. Management plan
8. Monitoring and assessment
9. Maintenance of high conservation value forests
10. Plantations

See www.fscus.org for a more detailed explanation of these principles.

How is the FSC Membership Comprised?

FSC's membership is divided into three chambers:

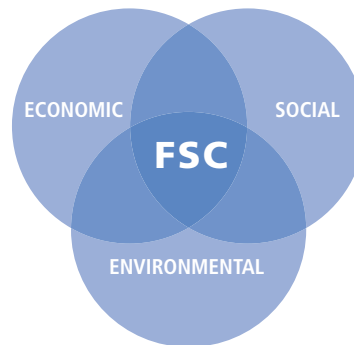
ECONOMIC CHAMBER:

Includes organizations and individuals with an interest in commercial forest products entities. A number of major retailers and forest products manufacturers are members of this chamber including Potlatch Corporation, Columbia Forest Products and Tembec.

SOCIAL CHAMBER: Intended for indigenous organizations and social movements which have an active interest in environmentally viable forest stewardship. Members of the social chamber include unions representing wood workers, and indigenous groups, as well as organizations such as Forest Trust and National Network of Forest Practitioners.

ENVIRONMENTAL CHAMBER: Limited to non-profit organizations and NGOs with a demonstrated commitment to environmentally appropriate, socially beneficial and economically viable forest stewardship. Some examples of current members include World Wildlife Fund, The Nature Conservancy, Greenpeace, National Wildlife Federation, and the Natural Resources Defense Council.

The purpose of the three-chamber system is to maintain a balance of voting power between the different interests within the FSC. Each chamber has 33.3% of the voting power in the general assembly. Motions require an affirmative vote of 66.6% of the total vote to be adopted.



How does certification work?

Under the FSC system there are two types of certifications.



FOREST MANAGEMENT (FM) CERTIFICATION

applies to the actual forestland. This certification applies the FSC Principles and Criteria (and any FSC regional standards that may be present in the area) to the land base. In order for a parcel to receive FSC endorsement, its forest management practices must meet the FSC's Principles and Criteria, as certified by an FSC-accredited, third party auditor.

The certification process basically involves an initial assessment of the land, followed by annual audits. The certifier's on-site visits verify compliance with FSC standards. A five-year contract is signed between the landowner and the certifier, committing the landowner to maintain the forest to FSC standards for the length of the contract. After five years, the process will start all over again with another full assessment, followed by annual audits.

CHAIN-OF-CUSTODY (COC) CERTIFICATION applies to the "supply chain" that the harvested, certified wood will travel through until it becomes a product for sale and purchased by the end consumer. COC certification applies to manufacturers and distributors of forest products. COC certification ensures that forest products that carry the FSC's "checkmark-and-tree" label can be tracked back to the certified forestland from which they grew. This tracking system is beneficial and necessary since the FSC label is a registered "certification trademark," similar to that of Underwriters Laboratories or Energy Star, rather than a "product trademark," as in the Nike swoosh. Certification trademarks provide consumers assurance as to the integrity of the claims made regarding the product. Any use of the FSC label by a COC certificate holder must be pre-approved by the company's certifier. All FSC claims

are based solely on the origin of the wood, and in no way reference any other aspect or quality of the product.

The chain-of-custody certification process is basically a verification of the manufacturer's ability to separately track all FSC materials throughout their business, from purchasing and inventory control to manufacture and sale. For most organizations in the U.S. this is a very simple, non-invasive process that verifies existing good business practices. With today's computerized tracking control systems, bar coding, and wand capabilities, keeping track of FSC materials is a relatively simple process. Like FM certifications, COC certificate holders will have an initial assessment followed by annual audits, and enter into a five-year contract with the certifier.



HOW CHAIN-OF-CUSTODY WORKS

1. Forests are certified according to FSC's Principles and Criteria.
2. Sound management and harvesting practices are followed as trees are cut.
3. Harvested trees are transported to a FSC certified mill, where logs are made into FSC certified lumber, veneer, pulp and other raw materials.
4. FSC certified manufacturers use FSC certified raw materials to make wood and paper products.
5. FSC labeled products are transported to stores worldwide.
6. Consumers purchase products with the FSC label.
7. Support for sound forest management grows, and the demand for FSC certified products increases, each time the cycle is completed.

What does FSC mean to green building?

During the development of many green building programs the founders were concerned about the origins of wood products. They did not want to reward the use of wood from forest products companies who were not managing their forests to the highest recognized standard. The FSC certification system is the only system, through the COC, that allows for green building projects to directly reward those forest products companies for managing their forests to



the highest standards. In the short time since U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program gave preference to FSC certified wood, 25% of the LEED certified projects have obtained the "certified wood credit" (Materials & Resources Credit 7). Each one of these projects has an interesting story to tell about new specifications, bringing new suppliers into FSC certification, and learning lessons about available supply. However, all of these projects have one thing in common: the project teams, owners, and buildings themselves are contributing to a growing green building movement that is asking, "where does my wood come from?" You can only answer that question if you are specifying, purchasing, and building with FSC certified wood.

SPECIFYING, BUILDING AND ACCOUNTING FSC USE

Specifying, Building and Accounting FSC Use

The Forest Stewardship Council has been present and growing across North America for more than ten years, and the use of FSC certified wood products in green building projects has been responsible for much of that growth. Many professionals who have designed, purchased, or built with FSC certified building materials have opinions and experiences ranging from, “its unavailable and too expensive,” to, “we had three different bidders and the price was the same as non-certified.” The former statement characterizes the market a few years ago and still rings true in certain sectors where products are still difficult to obtain. However, the later statement is where the market is moving. Today in many of the building material product sectors, increased availability has made things easier and in some cases at no extra cost.

Many factors go into the idea that “it’s unavailable and too expensive.” Incorrect bids, reluctant suppliers, shortened timelines, project location, unknown availability of specified products, a “business as usual” mentality and more have been responsible for making the above statement come true. Several of these factors can be addressed and diffused during the typical phases of a building project so they do not resurface or cause delays.

This section of *DESIGNING AND BUILDING WITH FSC* is a step-by-step guide that will result in solid specifications to increase the use of FSC certified wood. These steps may look a little daunting at first, but if conserving the world’s forests through the use of wood is part of your project’s goals, they are worth it. Not to mention the fact that it is always easier to be overly thorough during the planning and research phases of a project, as opposed to making costly changes during the building phase. Also, you have a number of free resources that you can interact with at your leisure.



This section includes:

A ROAD MAP TO FSC SUCCESS outlines steps that may be required to ensure FSC certified products make it to your project and are accurately documented.

SCHEMATIC DESIGN AND DESIGN DEVELOPMENT provides some ideas and resources to use prior to determining whether FSC products are appropriate to meet project goals.

CONTRACT DOCUMENTS offers instruction on the use of FSC Specification Language and accompanying forms, such as, the FSC Certified Bid Assurance Form and the FSC Qualified Vendor List.

CONSTRUCTION AND OCCUPANCY ensures that communication is taking place in a timely manner between the architects, general contractors, sub-contractors, and FSC certified suppliers or manufacturers during the construction phase.

A ROAD MAP TO FSC SUCCESS

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DESIGNING AND BUILDING WITH FSC |

STEP 1

DESIGN DEVELOPMENT

Identify wood products in your project

Do you know if wood products are available from manufacturers, suppliers, etc., with FSC certification?

NO

Go to findfsc.org to search for products

Did you find an FSC manufacturer or supplier?

YES

Proceed to next stage

NO

Send an email with your specific product needs to info@fscus.org

YES

Confirm FSC credentials at findfsc.org

Are they valid?

YES

Proceed to next stage

NO

Send an email to info@fscus.org

STEP 2

CONTRACT DOCUMENTS

Research and complete FSC Qualified Vendor List

Write FSC Specification *On a line item basis*

Complete and distribute Bid Assurance Form

Provide instructions and resources to bidders regarding FSC certified products

Send out Request for Bid (RFB)

Award bid

Conduct a pre-construction meeting to reaffirm project goals regarding use of FSC certified materials

STEP 3

CONSTRUCTION

Outline FSC Product Accounting Form

Monitor submittals as appropriate

Compile invoices and complete FSC Product Accounting Form

Submit documentation in case LEED MR7 credit is audited

STEP 4

OCCUPANCY

Submit final project to FSC-US for a case study about your project, possible publicity in the FSC-US newsletter and consideration for the "Designing and Building with FSC Award."

Schematic Design and Design Development

During the schematic design and design development stages of a project, many of the final product decisions have not been made and research is being conducted regarding a product's availability, feasibility and deliverability. As the project team finalizes its overall goals, specific areas where wood could be used become part of the focus. Once these areas have been determined, researching the availability of those wood products from FSC certified sources could begin.

Working with FSC-US, as a resource of information, early in the design process will allow project teams to specify FSC-certified forest products that are available and appropriate to the project.

A number of resources are available to assist with this research:

LOOK AT FSC-US WEBSITE (www.findfsc.org) for a list of FSC certified manufacturers and suppliers by clicking on “certified companies” to search for companies with COC certification by state,

or by “product search” to search for a specific product. You can also visit the new Green Building section for other resources.

SOLE SOURCE SPECIFICATION

For those instances where products are only available from one company with FSC certification, the FSC's Principles and Criteria for forest management provides ample justification for the unique and qualitative attributes of the sole-sourced item.

EMAIL YOUR PRODUCT REQUEST

to info@fscus.org. Include as many specifics about the product as you can, such as species, quantity, lengths of boards, and when and where the product will need to be delivered. FSC-US can distribute this



request to its network of suppliers, who will then be able to contact you directly.

CALL FSC-US in Washington, DC (202.342.0413) if you have any questions that cannot be answered via the information on the website.

Contacting FSC certified companies directly and requesting product samples, pricing, delivery time, etc, will assist project teams with further product decisions. Contacting suppliers and asking them questions will ensure that the information provided in the specification is accurate regarding grades, delivery time, etc. Provided that the responses to your inquiries have been met, the time has come to determine which products will be specified and purchased to meet the project's goals.

USING CHARACTER GRADES

One issue to consider during design development is the grade of wood that will be used on your project. Premium grades only come from a very small percentage of the forest resource, so ensuring that a specified grade meets the intention of the applications will be important. Using a variety of grades will not only increase the likelihood of obtaining an FSC certified product, but it also uses the forest resource more efficiently, costs less, and often times looks identical to the premium grade. Essentially, match the specified grade to the specified use and forest resources will be better utilized.

Do not close this chapter until you have:

ARCHITECTS

- ☐ Identified areas for FSC certified wood use.
- ☐ Researched and contacted FSC certified product manufacturers and suppliers.

SPECIFYING, BUILDING AND ACCOUNTING FSC USE

SMART BIDS

Requesting “FSC certified” as the primary bid, and “non-certified” for the alternate bid can result in:

- Competitive pricing
- Due diligence to submit a responsive bid
- A strengthened platform for any necessary negotiation

Contract Documents

Contract documents provide a framework of responsibility for all project team members. The following tools should be offered for instruction on the use of FSC certified wood products: FSC Specification Language, the FSC Qualified Vendor List, and the FSC Certified Bid Assurance Form. These documents will increase the likelihood of success and education of general contractors, sub-contractors and material suppliers.

FSC Qualified Vendor List (page 24) should always be provided with the Request for Bid (RFB) to inform general contractors and subcontractors about qualified suppliers, and to ensure accurate bidding and sourcing of FSC certified products as specified. Providing a resource list as part of the **CSI 002113 - Instructions to Bidders**, referencing assistance from FSC-US, will help assure that your specification is fulfilled.

FSC Specification Language (page 22) is key to communicating the specific product desires of the project team to all that will bid, buy, and build with FSC certified products. Research during the design development phase should have provided a number of products that are available. A higher success rate has been observed for those projects that employ an FSC certified *line-item strategy* as opposed to a blanket specification for all wood products. Also ensure the information discovered during design development phase related to grade, delivery times, and species are included in the specifications, so contractors are aware if special steps need to be taken to secure products.

FSC Certified Bid Assurance Form (page 23) should be located in each specific sub-section where FSC certified wood products are specified, to help assure due diligence on the part of bidding contractors and sub-contractors and ensure that they fully understand their obligations to provide a responsive bid. This form will provide insurance

against potentially time-consuming and costly pitfalls as well as fraudulent claims.

The following steps are recommended for distribution and retrieval of this form:

1. Specifications are finalized and the FSC Certified Bid Assurance Forms are inserted in all sections that specify FSC certified wood.
2. Bidding general contractors distribute subsections of specification with FSC Certified Bid Assurance Forms to subcontractors or potential suppliers.
3. Supplier returns form with their bid to the general contractor who forwards it on to the architect or project manager. If necessary to accommodate the last-minute nature of some bid processes, the due date for the FSC Certified Bid Assurance Forms can be scheduled for 24 hours after the bid deadline.



Do not close this chapter until you have:

ARCHITECTS

- ☐ Specified FSC certified wood on a line-item basis for available products.
- ☐ FSC Qualified Vendor List and FSC Certified Bid Assurance Forms have been distributed to appropriate parties.
- ☐ Communicated with your general contractor about the project's goals as they relate to FSC certified wood.

GENERAL CONTRACTORS

- ☐ Informed bidders about FSC certified wood goals and provided resources and tools.
- ☐ Received confirmation that bidders received the FSC Qualified Vendor List and FSC Certified Bid Assurance Forms with Request for Bid (RFB).

Construction and Occupancy

Construction and occupancy phases require that communication is taking place in a timely manner between the architects, general contractors, sub-contractors, and suppliers or manufacturers of FSC certified products. Poor or no communication during this phase of a project can be detrimental to all of the project team members, especially the owner, because they often result in project delays. It is essential for the general contractor to clearly communicate the project goals to the sub-contractors so that product delivery or the building schedules are not delayed. Due diligence and thoroughness during the previous two phases should make this step very simple.



Once the bids are awarded and the general contractor or sub-contractors begin to purchase materials, it will be essential to record the types of FSC certified products that have been purchased by using the **FSC Product Accounting Form** (page 25). Product invoices that contain the FSC-certified companies COC number on a line-item basis referring to the FSC certified products are the best submittal documents to demonstrate use of FSC certified wood. This form offers the general contractor or project manager a blank document to fill-out various details pertaining to a product's attributes. What is the product and CSI Spec. number? Were submittals issued for this product? Who was the supplier and what was their FSC chain-of-custody (COC) number? Is a copy of an invoice available for verification of the products supplier and FSC status?

Many green building programs conduct random audits to ensure that the credit requirements have been fulfilled. These questions help the general contractor or project manager get organized prior to an audit or owner walk through. Once the project is complete, the FSC Product Accounting Form and its accompanying receipts would be all the proof

you will need to show that FSC certified wood was used on this project.

UNDER UTILIZED OR ALTERNATIVE SPECIES

When specifying lumber or veneers, consider the use of under utilized or alternative species (domestic or tropical) that are now being harvested from FSC forests. Species that do not appear merchantable are often cleared and burned from forests. In a very diverse forest this results in the all out clearing of all species that do not appear merchantable to find those that are. During design development, research the possibilities of these under utilized or alternative species, for often times they have "new look" grain patterns, may cost less, have similar characteristics as commonly used wood products, and the forest is not being cleared for one or two species. Using more of a variety of species will result in less pressure on a forest ecosystem.

Do not close this chapter until you have:

ARCHITECTS

- ☐ Tracked submittals of FSC certified product invoices from qualified suppliers.

GENERAL CONTRACTORS

- ☐ Clearly communicated to all relevant sub-contractors the FSC certified wood project goals and offered them tools and resources to achieve those goals.
- ☐ Provided submittals of FSC certified product invoices from qualified suppliers.
- ☐ Compiled information for FSC Certified Wood Accounting Form.

CASE STUDIES

Case Study: TRAUGOTT TERRACE

The Building

Traugott Terrace is an urban infill project that is located in the Belltown neighborhood of Downtown Seattle. The goal of this project was to expand the services provided by the Matt Talbott Center, a multi-service agency focused on programs built around initiatives to stop substance abuse and prevent relapse into alcoholism and addiction. Housing at Traugott Terrace includes a mix of single room occupancy units, studios, one-bedroom units and a common area. The project team was required to work closely together due to the project goal of reaching LEED certification. The lead architecture firm was Environmental Works, a non-profit firm that advocates for the improvement of physical, economic, and social environment by providing sustainable architecture and planning services to low income community groups throughout the Pacific Northwest.



A Committed Project Team

Even though LEED was not an initial project goal, early in the design phase of this project, the project's funding required a goal setting meeting. Project team members were encouraged to set goals and priorities in regards to sustainable strategies, create buyoff from all parties involved in the process, and allocate responsibilities. After this meeting Environmental Works took it upon themselves to begin researching appropriate materials that could be included in this project. They worked to ensure that the performance specifications identified material characteristics the contractor could obtain with little or no challenge.

A major goal of this project was to keep it affordable and adhere to an already established budget. One of the materials researched during this

period was Forest Stewardship Council (FSC) certified wood products. Manufacturers and suppliers of FSC certified wood were contacted and delivery times, pricing, and grade availability were all established so the general contractor could source material with no problem. In the final construction documents, FSC certified wood was specified for the sheathing plywood (CDX) and framing lumber. This requirement was part of a larger Request for Bid (RFB) package that went out to a public bid process.

Experience Pays Off

The winner of the public bid process was Rafn Company of Bellevue, WA. Rafn had recently

completed the IslandWood outdoor learning center on Bainbridge Island. IslandWood achieved LEED Gold certification for many energy and environmental features, including a large amount of FSC certified wood. It was clear to the members of the project team that Rafn Company had exactly the experience sought to ensure Traugott Terrace was a building that could push the green building limits. Environmental Works provided research regarding suppliers of FSC certified wood, and Rafn already had existing relationships with a few FSC certified distributors in the Seattle metropolitan region. The orders were placed for FSC certified sheathing plywood (CDX) and framing lumber, and delivery went smoothly according to those involved. Ann Schuessler of Rafn Company attributes her firms' project experience and familiarity with local FSC suppliers to making this part of the project go smoothly.

Lessons Learned

Through research early in the project phases, to a committed owner and a green building savvy general contractor, this project is a success story. As architects, designers, building owners, general contractors, sub-contractors, and other professionals work on green building proj-

ects the education level increases ten-fold. The first project always seems to be painful, but once that first project is complete the following projects become easier, less of a hassle, and very rewarding. The FSC certified sheathing plywood (CDX) and framing lumber have been encased in drywall and will probably never be seen again. Some argue that if we can't see the certified products why would we buy them? Because projects such as this, which specified a significant amount of FSC certified products, will continue the market transformation of the forest products industry. All told 78% of the new wood used to build Traugott was FSC certified. Even though we can't see the wood itself, this project continued a trend that has encouraged more suppliers, distributors, and manufactures to become FSC certified to stay competitive. Now, there are three lumber yards servicing the Seattle/King County area who are stocking the basic materials used for framing buildings, and more have been making inquiries into how they can become an FSC certified supplier.



Case Study: LEBANON HILLS VISITOR CENTER

The Building

In October 2003, Dakota County, MN welcomed guests with open arms to the new Lebanon Hills Visitor Center.

The Center, and its surrounding acres of prairies, woodlands, lakes and wetlands, provide environmental education and outdoor recreation opportunities, recreation equipment rental, access to waterways and miles of trails, and visitor services (such as meeting spaces) to the parks. The 6,000 sq. ft., \$2.6 million building, which is a model of sustainable design and construction, was created with more than \$27,000 worth of FSC-certified products, and is unique in the upper Midwest because it is the first building of its kind to implement sustainable principles all the way through from planning and construction to building operation.



Professionals Making a Difference

Paul Anderson, the Director of the Environmental Education Studio and LEED accredited professional for the project architect Partners and Sirny, worked to specify as much FSC material as possible. His team worked carefully on specifying and researching materials to make the necessary supply chain links. Anderson said the process was a “positive experience” and that they believe they used enough FSC material to qualify for the certified wood credit under the LEED rating system.

Obtaining FSC-certified wood for the project posed little difficulty for L.S. Black Construction, the contractor for the project. They learned about the market for FSC-certified products and benefited from the growing supply available in the Twin Cities area. “Finding the appropriate source and talking to the right people who know and understand the market for FSC products is a critical factor in working with these materials,” said Sterling Black, vice president for L.S. Black



Construction. Because many local lumberyards still don't stock FSC-certified materials, contractors need to do a little research before issuing purchase orders: "we were careful in specifying the proper lengths and quantities for our original order," stated Black.

Black placed their orders through Certified Wood Products, Inc. of Minnetonka, MN. Their order arrived two weeks later, on time and on-site. Black felt the two-week turnaround time for the FSC order was entirely reasonable, though

somewhat longer than the typical industry standard for commodity building materials. Black found that there was only a small differential in prices between FSC-certified material and the usual non-certified products. Black commented, "The slight [price] increase in some products was not significant when compared to the total cost of the projects. Some FSC products may have even been cheaper than their uncertified counterparts. If there was an increase, it was certainly within tolerances."

FSC material used for the Center included:

- Hem-fir framing lumber from The Collins Companies, harvested from the Collins Lakeview Forest in Lakeview, OR.
- Western fir plywood from Roseburg Forest Products, harvested from the Roseburg forest in northern CA.
- Birch interior trim, harvested from the nearby FSC-certified forests of Aitkin County, MN and purchased through Certified Wood Products.

Lessons Learned

Overall, the FSC-certified material included in the specs for the project presented little difficulty for L.S. Black Construction and, in fact, yielded many rewards. It was straightforward for them to use FSC wood in a major, visible project and allowed them to familiarize themselves with an emerging market trend in specifying FSC products for commercial construction. Dan Haugen of Certified Wood Products stated that he was, "pleased to have the opportunity to link two Minnesota counties together for this important project. Aitkin County had the FSC-certified forest, and Dakota County wanted to reward excellent forest management." He also agreed that teamwork played a major role in specifying and sourcing the FSC-certified materials, and Partners and Sirny and Dakota County decision makers, "deserve a lot of credit for their flexibility. They agreed to change the millwork specifications midstream to a more forest friendly 'character grade' of white birch. This decision allowed a native underutilized species to be showcased in a unique learning center."



Case Study: DUKE UNIVERSITY– Fitzpatrick CIEMAS

The Building

For more than 100 years, Duke University's Pratt School of Engineering has been educating young men and women about the possibilities that engineering could offer. The new Fitzpatrick Center for Interdisciplinary Engineering, Medicine, and Applied Sciences (CIEMAS), which opened in August 2004, offers the next generation of engineering students a cutting edge building that is LEED certified. The CIEMAS is a two-building, 322,000 square foot complex that required a committed project team to meet its LEED goals. The project team consisted of the Duke University Facilities Department, the University Architect's office, the architects of Zimmer Gunsel Frasca Partnership (ZGF), and construction management by Skanska USA Building, Inc.

Going for LEED certification

The CIEMAS building was well on its way through the design development stage when Duke decided to register it as a LEED project. Skanska USA Building, Inc was a little concerned that this new requirement would impact the project budget and the construction schedule. A LEED credit that was identified as achievable by the project team was Material & Resource (MR) credit 7: Certified Wood. From architectural wall and ceiling panels to hardwood floors to millwork and laboratory casework to tables in the auditorium, approximately 80% of the wood used in the project was FSC certified. EcoTimber's prefinished engineered Brazilian Cherry flooring and architectural millwork from S.J. Morse Company were just some of the FSC certified products in the CIEMAS Building.



Shelley McPhatter, Project Manager for Skanska USA Building, was concerned when the specifications changed during design development to include products that she had not worked with. During an interview, McPhatter explained that the general requirements in the specifications started changing to read that, "50% of all wood products had to originate from FSC certified forests." However, little guidance was offered on what FSC meant and how to purchase FSC products to achieve this new requirement. Due to the late decision to register the CIEMAS building as a LEED project, this project team was required to climb a steep learning curve during the projects normal time-line.

According to McPhatter, a few things that have been published in this training guide would have helped her and the project team. First, specification language and a strategy for specifying FSC wood products on a line-item basis. McPhatter stated that had FSC specification language been used, the learning curve of her and the subcontractors would have been shorter. Since this was a request for products that were manufactured or supplied by companies who earned an FSC chain-of-custody certificate, it would have been a good strategy to research the qualified manufacturers during design development and offer a list to the construction manager and subcontractors.

During the LEED certification process McPhatter was asked to produce the receipts of purchase for the FSC certified wood. Unfortunately, she was unaware during the project that the FSC Product Accounting Form was available to account for FSC products. She had to work backwards a full year with product suppliers trying to collect this information. McPhatter was happy to hear that a form could be filled out as the products are coming in and she is pleased



about the option of using the FSC Product Accounting Form on her next project to avoid retracing her steps.

Lessons Learned

McPhatter summarized that, “FSC wood is not a difficult product to procure and install in a building. All it takes is education, from the architect specifying it with enough information, to the construction manager and general contractor including all the information in the bid packages, to the subcontractor understanding FSC and the certification process. Early education in the project is the key.”

The green building movement and LEED projects are requiring professionals to rethink many of the practices that have become commonplace. If market transformation in the building industry is going to succeed, lines of communication between owners, architects, interior designers, builders, project managers, green building consultants, sub contractors, and suppliers need to be open and clear. Taking a few extra steps to research available FSC products during the planning and research phases of a project can be very beneficial. Providing educational materials to project team members early on in a project through

specifications and project meetings will allow for the project to continue on time without costly delays. Duke University has several other building projects in its portfolio that will work toward incorporating FSC wood for a LEED credit. By using the tools and resources offered in this training guide, more projects will experience the same level of success as the CIEMAS building.



FSC GREEN BUILDING RESOURCES

What are the differences between FSC and other forest certification systems?

FERN

Footprints in the Forest – Current practice and future challenges in forest certification, February 2004.

www.fern.org/pubs/reports/footprints/footpage.htm

American Lands Alliance

A Review of the American Forest and Paper Association's Sustainable Forestry Initiative (SFI), November 2003.

www.americanlands.org/documents/1090421417_SFInov03RepFinal.pdf

Meridian Institute

Comparative Analysis of the Forest Stewardship Council and Sustainable Forestry Initiative Certification Programs, October 2001.

www.merid.org/comparison/

Where can I find FSC products?

Forest Stewardship Council-US: www.findfsc.org

Find products by clicking on “product search,” or find specific companies with FSC certification by clicking on “certified companies”. You can also email a product request to info@fscus.org. Be sure to include as many details as possible with your product request.

Interested in green building news and newsletters?

FSC-US monthly e-newsletter

to subscribe go to www.fscus.org/news/

Eco-structure monthly magazine

www.eco-structure.com

Environmental Design & Construction monthly magazine

www.edcmag.com

Environmental Building News

www.buildinggreen.com/ecommerce/ebn.cfm

Green Clips

www.greenclips.com

FSC GREEN BUILDING RESOURCES

FSC Specification Language

PART ONE — GENERAL

1.1 Related Documents

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other **Division 1** Specification Sections, apply to this Section.

1.2 Summary

- A. This section includes administrative and procedural requirements for use of FSC certified forest products during performance of the Work, including the following:
 1. Certified Wood Bid Compliance Form
 2. Vendor Reference List
 3. Certified Wood Project Documentation Summary
- B. Related Sections include the following:

Division 1 — General Requirements

- 013100 Project Management & Coordination:** through meetings and conference calls ensure that all general and sub-contractors are familiar with the projects' FSC goals.
- 013300 Submittal Procedures:** ensure that FSC Chain-of-Custody (COC) certificates are submitted from qualified manufacturers, fabricators, or suppliers before products are purchased.
- 013531** If appropriate, reference LEED Requirements
- 014300 Quality Requirements:** for submitting a report of manufacturers, fabricators, or suppliers FSC Chain-of-Custody (COC) qualifications.
- 017853 Sustainable Design Closeout Documentation:** which will include Project Documentation Summary form and receipts from FSC COC suppliers.

Definitions

FSC (Forest Stewardship Council): All wood products designated in the specification as "FSC certified"

Certified Well-Managed Forests: Forests certified to be in compliance with the standards endorsed by the Forest Stewardship Council (FSC).

FSC-certified Wood Products: Products milled or otherwise altered by manufacturers certified to be in compliance with the standards endorsed by the Forest Stewardship Council (FSC).

PART TWO — PRODUCTS

2.1 Basic Product Requirements

- A. Wood products in this section that have been identified through research as being available from FSC-certified sources, and should be specified on a line-by-line basis as "FSC-certified." Approved vendors are available online at: www.fscus.org

FSC Products in CSI MasterFormat

Division 3 — Concrete

031000 Concrete Forms & Accessories

Division 6 — Wood & Plastics

061000 Rough Carpentry

062000 Finish Carpentry

064000 Architectural Woodwork

Division 7 — Thermal & Moisture Protection

073129 Shingles & Shakes

074600 Siding

074643 Fiber-Reinforced Cementitious

Division 8 — Openings

081400 Wood Doors

083000 Specialty Doors & Frames

Division 9 — Finishes

095000 Ceilings

096400 Wood Flooring

097400 Flexible Wood Sheets

Division 12 — Furnishings

123200 Manufactured Wood

Casework

123500 Specialty Casework

125100 Office Furniture

125600 Institutional Furniture

125900 Systems Furniture

129000 Other furnishings

2.2 Submittals

- A. For all wood products designated in this specification as "FSC certified," provide evidence of compliance with FSC standards as follows:
 1. Demonstrate that products are FSC certified by providing vendor invoices. Invoices will contain the vendor's Chain-of-Custody (COC) number and identify each FSC certified product on a line-item basis. A "vendor" is defined as the company that furnishes wood products to project contractors and/or subcontractors for on-site installation.
 2. Wood products without submittal of acceptable documentation will be rejected.

2.3 Quality Assurance

- A. All wood products designated as "FSC certified" in this specification shall be certified according to the rules of the Forest Stewardship Council (www.fscus.org).
- B. The following North American certification bodies are accredited by the FSC to certify forest products:
 - Scientific Certification Systems (www.scs-certified.com)
 - SmartWood (www.smartwood.org)
 - SGS Qualifor (www.qualifor.com)
 - Soil Association (www.soilassociation.org)

2.4 Qualified Raw Materials and Solid Wood Product Vendors

- A. Provide list of qualified vendors to assist contractors and sub-contractors. **Where possible, contact information for potential vendors should be included in the specification.**

PART THREE — EXECUTION

3.1 Coordination and Verification

- A. The contractor shall verify and coordinate the use of all wood products specified as FSC certified.

FSC Certified Bid Assurance Form

Project Name _____

Project Manager/Contact _____

This section to be completed by Bidder:

Specification Section(s) _____

General Contractor _____

Subcontractor _____

This section to be completed by FSC certified forest products vendor:

STATEMENT OF CERTIFICATION

As the representative of _____

I give my assurance that we are able to supply FSC certified wood products as:

- 1) We are FSC certified for chain-of-custody and our number is ____— ____— _____. *All invoices and shipping documents relating to FSC certified products will be labeled with our company's chain-of-custody (COC) number. In addition, each FSC certified product will be identified on a line-item basis in accordance with FSC rules.*
- 2) Our company's statement of product availability, delivery times, and pricing reflect due diligence based on market conditions at the time of inquiry.

Signature _____ Date _____

Print Name _____

Please send this completed form back with your bid to supply the FSC certified forest products specified.

FSC GREEN BUILDING RESOURCES

FSC Qualified Vendor List

The following list should have been provided through research into manufacturers, distributors, and suppliers of FSC certified products to assist bidding general and sub-contractors. Use of the below suppliers is not required, nor is there any guarantee implied as to their capability or performance.

Company _____
 Address _____

 Salesperson _____
 Phone _____
 Email _____
 CSI Section _____ Chain of Custody # _____ -COC- _____

Company _____
 Address _____

 Salesperson _____
 Phone _____
 Email _____
 CSI Section _____ Chain of Custody # _____ -COC- _____

Company _____
 Address _____

 Salesperson _____
 Phone _____
 Email _____
 CSI Section _____ Chain of Custody # _____ -COC- _____

Project Name _____

Project Manager/Contact _____

Company _____
 Address _____

 Salesperson _____
 Phone _____
 Email _____
 CSI Section _____ Chain of Custody # _____ -COC- _____

Company _____
 Address _____

 Salesperson _____
 Phone _____
 Email _____
 CSI Section _____ Chain of Custody # _____ -COC- _____

Company _____
 Address _____

 Salesperson _____
 Phone _____
 Email _____
 CSI Section _____ Chain of Custody # _____ -COC- _____

FSC Product Accounting Form

To be completed by the project manager during construction.

Project Name _____

Project Manager/Contact _____

Product CSI Section	Submittal Required? Attached?		Supplier's Name	Chain-of-Custody#	Product Description	Copy of Invoice attached?
				_____-COC-____		YES NO
				_____-COC-____		YES NO
				_____-COC-____		YES NO
				_____-COC-____		YES NO
				_____-COC-____		YES NO
				_____-COC-____		YES NO
				_____-COC-____		YES NO
				_____-COC-____		YES NO
				_____-COC-____		YES NO

Sample Invoice for FSC Certified Products

FSC certified products, with corresponding chain-of-custody number, must be documented on a line item basis.

Acme Wood, Ltd.
1234 South Street
Anywhere, USA 98765

INVOICE

Bill to		Ship to		Date	Invoice #
Sean Jones Jones & Sons Builders 456 East Street Anywhere, US 43210 USA		Sean Jones Jones & Sons Builders 456 East Street Anywhere, US 43210 USA		05/01/05	0034421
				Project	
				Anywhere Building	
Salesperson	Terms	Ship VIA	Ship date	Customer #	PO #
TGA	COD	ground	05/01/05	RT-056	0505TGA
Item/Description		Quantity	Unit	Price/Per Unit	
FSC-Cherry 4/4 FASEL S2SIE, 13/16 FSC #SW-COC-123		49	BDFT	\$4900.00/100.00	
Cherry 3/4 A-1 PLSL Classic Core		32	BDFT	\$4800.00/150.00	

FOREST STEWARDSHIP COUNCIL U.S.

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Washington, DC 20007

PHONE: 202.342.0413
(toll free) 1.877.FSC.LOGO

FAX: 202.342.6589

E-MAIL: info@fscus.org

WEBSITE: www.fscus.org



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www.certifiedwoodproducts.net

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www.panelsource.net

Potlatch

www.potlatchcorp.com



www.tembec.com



WARM SPRINGS FOREST PRODUCTS INDUSTRIES

www.wsfpi.com



www.columbiaforestproducts.com



www.earthsourcewood.com



Market Connections

www.ecotrust.org/forestry



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www.sjmorse.com



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DO YOU KNOW WHERE YOUR WOOD COMES FROM?